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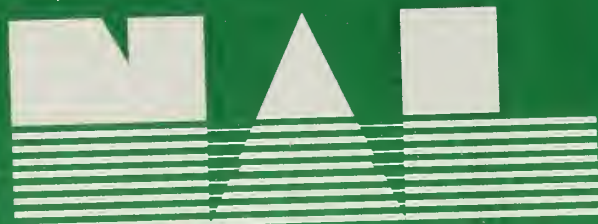
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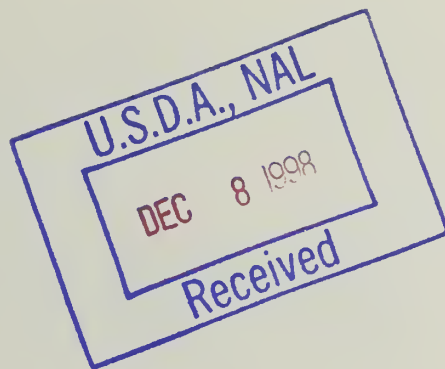
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Agriculture**



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## UNITED STATES STANDARDS

*for grades of*

# CANNED APPLESAUCE

**Fourth Issue**  
*As Amended*

**EFFECTIVE JUNE 25, 1974**

**UNITED STATES DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
FRUIT AND VEGETABLE DIVISION  
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH**

These standards supersede the standards which have been in effect since  
December 3, 1970

## FOREWORD

This is the fourth issue, as amended, of the United States Standards for Grades of Canned Applesauce. The amendments were published in the *Federal Register* of June 25, 1974 (39 F.R. 22939) to become effective upon publication.

Previous issues of these standards were:

<i>First Issue:</i>	<i>Effective December 15, 1932</i>
<i>Second Issue:</i>	<i>Effective January 25, 1934</i>
<i>Third Issue:</i>	<i>Effective September 18, 1950</i>
<i>Amended:</i>	<i>Effective July 1, 1957</i>
<i>Fourth Issue:</i>	<i>Effective December 3, 1970</i>

These standards are included in the Code of Federal Regulations, Title 7--Agriculture, Part 52.

Issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality, the grade standards are for the voluntary use of producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and/or determining loan values.

These standards will also serve as a basis for the inspection and grading of this commodity by the Federal inspection service, which is also provided under the Agricultural Marketing Act of 1946. This service, available for inspection and grading of other processed products as well, is offered to interested parties, upon application, on a fee-for-service basis.

These standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards obtained from:

Chief, Processed Products Standardization  
and Inspection Branch  
Fruit and Vegetable Division, AMS  
U.S. Department of Agriculture  
Washington, D.C. 20250

UNITED STATES STANDARDS FOR GRADES OF  
CANNED APPLESAUCE  
EFFECTIVE JUNE 25, 1974

Sec.

- 52.331 Product description.
- 52.332 Color types.
- 52.333 Flavor types.
- 52.334 Type of pack.
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- 52.345 Soluble solids determination.
- 52.346 Determination of consistency.
- 52.347 Examination for defects.
- 52.348 Ascertaining the grade of a lot.
- 52.349 Score sheet for canned applesauce.

(Authority: The provisions of this subpart issued under Sec. 205,  
60 Stat. 1090 as amended; 7 U.S.C. 1624).

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NOTE: Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act, or with applicable State laws and regulations.



## §52.331 PRODUCT DESCRIPTION.

"Canned applesauce" is the product represented as defined in the standards of identity for canned applesauce (21 CFR 27.80) issued pursuant to the Federal Food, Drug, and Cosmetic Act.

## §52.332 COLOR TYPES.

(a) *Natural color.* (1) Canned applesauce in which the color of the finished product is derived wholly from the apple ingredient.

(2) When a spice or spices have been added, consideration is given to the color, if any, imparted by the added spice or spices.

(b) *Artificially colored.* Canned applesauce in which the color of the finished product is derived from an artificial coloring substance as permitted in the Federal Food and Drug Definitions and Standards of Identity mentioned in §32.331.

## §52.333 FLAVOR TYPES.

(a) *Natural flavor.* Natural flavored canned applesauce is the product in which the flavor is derived from the apple ingredient and other permitted additives exclusive of flavorings or spices.

(b) *Flavored.* Flavored canned applesauce is the product in which the flavor is derived substantially from an added flavoring ingredient, including artificial flavorings.

(c) *Spiced.* Spiced canned applesauce is the product in which the flavor is derived substantially from an added spice(s).

## §52.334 TYPE OF PACK.

(a) *Unsweetened.* Canned applesauce prepared without the addition of nutritive carbohydrate sweeteners. The product shall test not less than 9° Brix as prescribed under §52.345.

(b) *Sweetened.* Canned applesauce with nutritive carbohydrate sweeteners added.

## §52.335 STYLES.

(a) *Regular (or comminuted).* Canned applesauce in which the apple ingredient has been comminuted into granular particles.

(b) *Chunk (or chunky).* Canned applesauce in which the apple ingredient has been chopped into small pieces.



## §52.336 GRADES.

(a) "U.S. Grade A" (or "U.S. Fancy") is the quality of canned applesauce that possesses a high degree of excellence and that scores not less than 90 points when scored in accordance with the scoring system outlined in this subpart with respect to:

- (1) Color,
- (2) Consistency,
- (3) Defects,
- (4) Finish, and
- (5) Flavor.

(b) "U.S. Grade B" (or "U.S. Choice") is the quality of canned applesauce that possesses a reasonably high degree of excellence and that scores not less than 80 points when scored in accordance with the scoring system outlined in this subpart with respect to:

- (1) Color,
- (2) Consistency,
- (3) Defects,
- (4) Finish, and
- (5) Flavor.

(c) "Substandard" is the quality of canned applesauce that fails to meet requirements for "U.S. Grade B".

## §52.337 FILL OF CONTAINER.

The fill of container is not incorporated in the grades of the finished product since fill of container, as such, is not a factor of quality for the purpose of these grades. The standard of fill of container as specified in the Standard of Fill of Container for Canned Applesauce (21 CFR 27.81) issued pursuant to the Federal Food, Drug, and Cosmetic Act, is a fill not less than 90 percent of the total capacity of the container, as determined by the general method for fill of containers prescribed in 21 CFR 10.6(b); except that in the case of glass containers having a total capacity of 6-1/2 fluid ounces or less (192 ml.), the fill is not less than 85%.

## §52.338 ASCERTAINING THE GRADE.

(a) The sample unit size for evaluating the factors of defects and consistency is the amount of applesauce required to fill level full a cylinder measuring 3 inches inside diameter and 3-1/4 inches high.

(b) The grade of canned applesauce is ascertained by considering the respective ratings for the factors of color, consistency, defects, finish, and flavor, in conjunction with other non-scoreable requirements.

(c) The relative importance of each factor which is scored is expressed numerically on the scale of 100. The maximum number of points that may be given such factors is:

Factors:	Points
Color - - - - -	20
Consistency - - - - -	20
Defects - - - - -	20
Finish - - - - -	20
Flavor - - - - -	20
Total score - - - - -	<hr/> 100

§52.339 ASCERTAINING THE RATING OF THE FACTORS WHICH ARE SCORED.

The essential variations within each factor which is scored are so described that the value may be ascertained for such factors and expressed numerically. The numerical range within each factor which is scored is inclusive (for example, "18 to 20 points" means, 18, 19, or 20 points).

§52.340 COLOR.

(a) (A) *Classification.* Canned applesauce that possesses a good color may be given a score of 18 to 20 points. "Good color" means that the product is bright, practically uniform, and in addition has the following meanings with respect to the following types:

(1) *Natural.* (i) The color is typical for the variety or varieties used and may range from a white color that may be slightly translucent to a light golden color; such color is free from tinges of pink or gray and free from discoloration due to oxidation, scorching, or other causes.

(ii) With respect to spice flavored applesauce, the color is characteristic of the color imparted, if any, by the added spice. Such color is free from tinges of pink or gray and from discoloration due to oxidation, scorching, or other causes.

(2) *Artificially colored.* The color is bright and distinct but not saturated.

(b) (B) *Classification.* Canned applesauce that possesses a reasonably good color may be given a score of 16 or 17 points. Canned applesauce that falls into this classification shall not be

graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably good color" means that the color of the finished product may be dull, is reasonably uniform, and in addition has the following meanings with respect to the following types:

(1) *Natural*. (i) The color is typical for the variety or varieties used and may be slightly brown, slightly pink, or slightly gray, but is not off color.

(ii) With respect to spice flavored applesauce, the color imparted by the added spices may be no more than slightly affected by pink or grey color but is not off color.

(2) *Artificially colored*. The color may be fairly bright and is distinct but not saturated.

(c) *(SStd) Classification*. Canned applesauce that fails to meet the requirements of paragraph (b) of this section may be given a score of 0 to 15 points. Canned applesauce that falls into this classification shall not be graded above Substandard, regardless of the total score of the product (this is a limiting rule).

## §52.341 CONSISTENCY.

(a) *General*. Consistency refers to the flow characteristics of the product and to the degree of separation of free liquor when determined in accordance with the procedure prescribed under §52.346 of this subpart.

(b) *(A) Classification*. Canned applesauce that has a good consistency may be given a score of 18 to 20 points. "Good consistency" has the following meanings with respect to the following styles:

(1) *Regular (or comminuted)*. The product does not flow more than 6.5 centimeters; and there is not more than 0.7 centimeter free liquor present.

(2) *Chunk (or chunky)*. The product does not flow more than 7.5 centimeters; and there may be no more than a slight amount of free liquor present.

(c) *(B) Classification*. Canned applesauce that has a reasonably good consistency may be given a score of 16 or 17 points. Canned applesauce that falls into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably good consistency" has the following meanings with respect to the following styles:



(1) *Regular (or comminuted)*. The product does not flow more than 8.5 centimeters; and there is not more than 1 centimeter free liquor present.

(2) *Chunk (or Chunky)*. The product flows not more than 9.5 centimeters; and there may be no more than a moderate amount of free liquor present.

(d) *(SStd) classification*. Canned applesauce that fails to meet the requirements of paragraph (c) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

## §52.342 DEFECTS.

(ā) *General*. Defects refer to the degree of freedom from particles of seeds, discolored apple particles, peel, carpel tissue, stamens, and other objectionable particles. Compliance with requirements for Defects is determined by the method specified in §52.347.

(b) *Definition of terms*. - (1) *Carpel tissue*. The tough and sometimes hard and sharp tissue from the center portion (core) of the apple surrounding the seed cavity.

(2) *Stamens*. The dark hairlike substances from the blossom end of the apple.

(3) *Seed particles*. Whole seeds or any portion thereof from the core of the apple.

(4) *Discolored apple particles*. Apple particles that are discolored by bruise or other means to the extent that they do not blend well with the normal color of the product and are noticeable.

(5) *Peel*. Apple peel that does not blend well with the normal color of the product and is noticeable or that is tough whether or not it is visually noticeable.

(c) *(A) classification*. Canned applesauce that is practically free from defects may be given a score of 18 to 20 points. "Practically free from defects" means that any carpel tissue that may be present is not noticeable upon eating the product and there is present not more than:

(1) Three dark stamens; and

(2) A total of one-half of 1 square centimeter of seed particles, peel, and/or discolored apple particles of which one-fourth of 1 square centimeter may be medium and/or dark in color.

(d) *(B) classification.* Canned applesauce that is reasonably free from defects may be given a score of 16 or 17 points. Canned applesauce that falls into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably free from defects" means that any carpel tissue that may be present is no more than slightly noticeable upon eating the product and there is present not more than:

- (1) Five dark stamens; and
- (2) A total of one square centimeter of seed particles, peel, and/or discolored apples particles of which one-half of 1 square centimeter may be medium and/or dark in color.

(e) *(SStd) Classification.* Canned applesauce that fails to meet the requirements of paragraph (d) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

## §52.343 FINISH.

(a) *General.* Finish refers to the texture and tenderness of the apple particles, and with respect to Regular (or comminuted) style, the evenness of division of the apple particles; with respect to Chunk (or chunky) style, the proportion of chunks or pieces of apple in relation to fine apple particles that may be present.

(b) *(A) Classification.* Canned applesauce that has a good finish may be given a score of 18 to 20 points. "Good finish" means that the apple particles are tender and in addition has the following meanings with respect to the following styles:

(1) *Regular (or comminuted).* The apple particles are evenly divided, granular to the extent that they are of a crisp texture upon eating; not lumpy; and the product is free from a "pasty" or "salvy" texture.

(2) *Chunk (or chunky).* There is a high proportion of apple chunks present and any fine apple particles that may be present no more than moderately affects the appearance and/or eating quality of the product.

(c) *(B) classification.* Canned applesauce that has a fairly good finish may be given a score of 16 or 17 points. Canned applesauce that falls into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Fairly good" finish means that the apple particles are fairly tender but not hard or mushy, and in addition has the following meanings with respect to the following styles:

(1) *Regular (or comminuted)*. The apple particles are evenly divided; the product may lack granular characteristics, and the product may be slightly "salvy" or "pasty".

(2) *Chunk (or chunky)*. There is a fairly high proportion of apple chunks present and any fine apple particles that may be present do not seriously affect the appearance and/or eating quality of the product.

(d) *(SStd) classification*. Canned applesauce that fails to meet the requirements of paragraph (c) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

## §52.344 FLAVOR.

Flavor refers to the degree of excellence of the natural flavor and aroma of the apple ingredient; to the apparent relationship of acidity to sweetness; to the freedom of undesirable flavors; and with respect to flavored and spiced types, to the flavor balance of the apple ingredient and the flavor or spice ingredients.

(a) (A) *Classification*. Canned applesauce that possesses a good flavor may be given a score of 18 to 20 points. "Good flavor" means that the product has a distinct, pleasing, and characteristic flavor that is free from flavors due to overripe apples, oxidation, fermentation, caramelization, or ground or musty flavors due to storage or other causes or any other undesirable flavor, and in addition has the following meanings with respect to the following types:

(1) *Unsweetened*. The product has a good natural sugar-acid balance in that it may be slightly tart or slightly bland but it is free from astringent flavors; and it tests not less than 9° Brix, measured as prescribed in §52.345.

(2) *Sweetened*. The product has a good sugar-acid balance in that it may range from slightly tart to sweet; is free from astringent flavors; and tests not less than 16.5° Brix, measured as prescribed in §52.345.

(3) *Flavored; spiced*. In addition to meeting the flavor requirements for unsweetened or sweetened types, paragraph (a) of this section, as the case may be, the flavor is distinct and characteristic of the added flavoring ingredient or added spice(s) but is not strong.



(b) *(B) Classification.* Canned applesauce that possesses a reasonably good flavor may be given a score of 16 or 17 points. Canned applesauce that falls into this classification may not be graded above U.S. Grade B regardless of the total score for the product (this is a limiting rule). "Reasonably good" flavor means that the product may possess flavors due to overripe apples, oxidation, caramelization, or ground or musty flavors due to storage or other causes that are not objectionable but is free from flavors due to fermentation and in addition has the following meanings with respect to the following types:

(1) *Unsweetened.* The product has a fairly good natural sugar-acid balance in that it may be moderately tart, or it may be bland, or it may be slightly astringent, but not to the extent that it is objectionable; and it tests not less than 9° Brix, measured as prescribed in §52.345.

(2) *Sweetened.* The flavor of the product may be tart, is not excessively sweet, or it may be slightly astringent but not to the extent that it is objectionable; and it tests not less than 14.5° Brix, measured as prescribed in §52.345.

(3) *Flavored; spiced.* In addition to meeting flavor requirements for unsweetened or sweetened types of paragraph (b) of this section, as the case may be, the flavor derived from the added flavoring ingredient or spice ingredient(s) may be slightly weak or slightly strong but is not objectionable.

(c) *(SStd) Classification.* Canned applesauce that fails to meet the requirements of paragraph (b) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

## §52.345 SOLUBLE SOLIDS DETERMINATION.

The soluble solids content of canned applesauce is the soluble solids as determined by refractometric method prescribed in "Official Methods of Analysis of the Association of Official Analytical Chemists", 10th edition; page 309, section 20.016, except that no correction is made for water - insoluble solids. The soluble solids is expressed as "degrees Brix".

## §52.346 DETERMINATION OF CONSISTENCY.

### (a) *Equipment.*

- (1) USDA Flow Sheet No. 1.
- (2) Cylinder - 3 inches inside diameter; 3-1/4 inches high.
- (3) Scraper.

The USDA Flow Sheet No. 1, cylinder, and scraper may be obtained from the licensed supplier:

Art and Industrial Lamination Corp., Room 202, 8425 Hilltop Road,  
Fairfax Va. 22030.

(b) *Procedure.* (1) Stir contents of container thoroughly, with contents at approximately room temperature;

(2) Place the clean, dry cylinder exactly over the center of the flow sheet - placed on a flat surface under good lighting conditions - by aligning the inside of the cylinder with the periphery of the center circle;

(3a) Transfer the well-mixed sample to the cylinder so that the applesauce will fill the cylinder to level full; or

(3b) In the case of No. 10 containers, first transfer a well-mixed sample to a 600 ml. beaker or other suitable container (No. 303 or No. 2½ can) sufficient to fill the beaker or container before transferring the applesauce to the cylinder as stated in subparagraph (3a) of this paragraph;

(4) Remove any excess applesauce with a spatula or other suitable instrument, leveling off the top. (Do not remove any free liquor that accumulates around the bottom of the cylinder);

(5) With a smooth, even motion, lift the cylinder straight up, permitting the applesauce to spread freely;

(6) Permit the mound of applesauce thus formed to stand for exactly 1 minute;

(7) Determine the extent of flow by averaging the readings taken at the four quadrants of the flow sheet. (Readings are taken at the edge of the applesauce exclusive of any free liquor);

(8) In the case of Regular (or comminuted) style, determine the amount of free liquor, if any, by measuring the liquor from the edge of the applesauce at the four quadrants and averaging these measurements.

## §52.347 EXAMINATION FOR DEFECTS.

(a) *Sample preparation.* (1) In the case of Regular (or comminuted) style, with the use of the spreader, spread the sample unit of applesauce used for evaluating consistency (as specified in §52.346 (b) ) out over the flow sheet in an even layer holding the spreader in a vertical position in order to maintain an even, maximum depth permitted by the spreader.

(2) In the case of chunky style, spread the sample unit out in as shallow and even a layer as possible using either the notched edge or back edge of the scraper.

(b) *Appearance evaluation.* View the spread sample and evaluate the degree to which the general overall appearance is affected by any defects that may be present.

(c) *Measurable defects.* With a pair of tweezers or other suitable instrument, pick out all scoreable defects (as described in §52.342 (b) ) from the sample. Remove any excess apple particles from the defects and, except for stamens, place the defects in a contiguous position on the measurement chart in the corner of the flow sheet. Pick out all noticeable specks that may be beneath the surface of the applesauce to determine whether they are scoreable.

(d) *Stamens.* Count the dark stamens that may be present in the sample unit.

## §52.348 ASCERTAINING THE GRADE OF A LOT.

The grade of a lot of canned applesauce covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products thereof, and certain other processed food products (§§52.1 through 52.83).

# §52.349 SCORE SHEET FOR CANNED APPLESAUCE.

Size and kind of container - - - - -	- - - - -
Container mark or identification - - - - -	- - - - -
Label - - - - -	- - - - -
Net weight (ounces) - - - - -	- - - - -
Degrees Brix (by refractometer) - - - - -	- - - - -
Style - - - - -	- - - - -
Vacuum - - - - -	- - - - -

FACTORS	SCORE POINTS		
Color - - - - -	20	(A) 18 - 20 (B) <u>1/</u> 16 - 17 (SStd) <u>1/</u> 0 - 15	
Consistency - - - - -	20	(A) 18 - 20 (B) <u>1/</u> 16 - 17 (SStd) <u>1/</u> 0 - 15	
Defects - - - - -	20	(A) 18 - 20 (B) <u>1/</u> 16 - 17 (SStd) <u>1/</u> 0 - 15	
Finish - - - - -	20	(A) 18 - 20 (B) <u>1/</u> 16 - 17 (SStd) <u>1/</u> 0 - 15	
Flavor - - - - -	20	(A) 18 - 20 (B) <u>1/</u> 16 - 17 (SStd) <u>1/</u> 0 - 15	
Total - - - - -	100	- - - - -	
Grade - - - - -			

1/ Indicates limiting rule.

Dated: June 25, 1974

E. L. Peterson  
 Administrator  
 Agricultural Marketing Service

Amendments published in the Federal Register of June 25, 1974  
 (39 F.R. 22939).







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